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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/595,637	05/02/2006	Philippe Desbois	12810-00247-US1	3877

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EXAMINER

MCCULLEY, MEGAN CASSANDRA

ART UNIT	PAPER NUMBER
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1796

MAIL DATE	DELIVERY MODE
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10/15/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/595,637	Applicant(s) DESBOIS ET AL.	
	Examiner Megan McCulley	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 2, 4-7, 10, 12, 14, 16, 17, 19, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Braune et al. ("An Efficient Method for Controlled Propylene Oxide Polymerization: The Significance of Bimetallic Activation in Aluminum Lewis Acids").

Regarding claims 1, 2, 4, 10, and 12: Braune et al. teaches a process for preparing homopolymers of oxiranes/PO (propylene oxide) polymerization (title) comprising carrying out the polymerization in the presence of a quaternary ammonium (page 65, 1st column, last 5 lines) of the formula NR_4-X (NEt_4Cl) where R is alkyl and X is halogen. Also present is a mononuclear organylaluminum compound $[Al(L)Cl_2]$ (page 65, 1st column, last 4 lines) of the instant formula where one R radical is an arylalkyl and the other two are halogens.

Regarding claims 5, 14, and 16: Braune et al. teaches trimethylaluminum (page 64, second column, last paragraph), some of which would inherently remain in the composition.

Regarding claims 6, 17, 19, and 20: Braune et al. teaches the ratio of Lewis acid/quaternary ammonium to aluminate/organylaluminum compound is 1.5 (page 65 second column, end of first full paragraph and experiments 7 and 8).

Regarding claim 7: Braune et al. teaches adding the quaternary ammonium/ NEt_4Cl first (see page 67, Experimental Section).

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 3, 13, 15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Braune et al. ("An Efficient Method for Controlled Propylene Oxide Polymerization: The Significance of Bimetallic Activation in Aluminum Lewis Acids") as applied to claim 1 above and in view of Yu (U.S. Pat. 5,010,139).

Regarding claim 3: Braune et al. teaches the basic claimed composition as set forth above. Not disclosed is the copolymer with comonomers selected from styrene, α -methylstyrene, butadiene, isoprene or mixtures of these. However, Yu teaches a copolymer of ethylene oxide with a comonomer of a styrene (col. 5 line 67-col. 6 line 7). Braune et al. and Yu are combinable because they are both concerned with the same field of endeavor, namely polymerization of oxiranes using an organoaluminum compound (col. 7 line 35). At the time of the invention a person having ordinary skill in the art would have found it obvious to combine the styrene monomer of Yu with the polymer of Braune et al. and would have been motivated to do so because adding a cyclic comonomer to ethylene oxide significantly improves the antistatic performance of the polymer, as evidenced by Yu (col. 4 lines 16-26).

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Regarding claim 13: Braune et al. teaches the quaternary ammonium (page 65, 1st column, last 5 lines) of the formula NR_4-X (NEt_4Cl) where R is alkyl and X is halogen.

Regarding claim 15: Braune et al. teaches trimethylaluminum (page 64, second column, last paragraph), some of which would inherently remain in the composition.

Regarding claim 18: Braune et al. teaches the ratio of Lewis acid/quaternary ammonium to aluminate/organylaluminum compound is 1.5 (page 65 second column, end of first full paragraph and experiments 7 and 8).

Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Braune et al. ("An Efficient Method for Controlled Propylene Oxide Polymerization: The Significance of Bimetallic Activation in Aluminum Lewis Acids") as applied to claim 1 above and in view of McGee et al. (US 2002/0010268).

Regarding claims 8 and 9: Braune et al. teaches the basic claimed process as set forth above. Not disclosed is a first polymerizing a comonomer and then polymerizing the polyoxirane while concomitant use of alkali metal compound is made. However, McGee et al. teaches first polymerizing a polyolefin/comonomer, and then polymerizing an oxirane containing monomer such as ethylene oxide or propylene oxide to form a block copolymer while using an alkali metal compound such as potassium hydroxide or sodium methoxide (para. 29). Braune et al. and McGee et al. are combinable because they are both concerned with the same field of endeavor, namely the process of making oxirane polymers. At the time of the invention a person having ordinary skill in the art would have found it obvious to combine the block copolymer

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reaction scheme of McGee et al. with the process of Braune et al. and would have been motivated to do so for such desirable properties as producing an olefin block copolymer with excellent adhesion and a much lower cost than previously used adhesion promoters, as evidenced by McGee et al. (para. 12).

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Braune et al. ("An Efficient Method for Controlled Propylene Oxide Polymerization: The Significance of Bimetallic Activation in Aluminum Lewis Acids") as applied to claims 1 and 2 above and in view of Yu (U.S. Pat. 5,010,139).

Regarding claim 11: Braune et al. teaches the basic claimed composition as set forth above. Not disclosed is the copolymer with comonomers selected from styrene, α -methylstyrene, butadiene, isoprene or mixtures of these. However, Yu teaches a copolymer of ethylene oxide with a comonomer of a styrene (col. 5 line 67-col. 6 line 7). At the time of the invention a person having ordinary skill in the art would have found it obvious to combine the styrene monomer of Yu with the polymer of Braune et al. and would have been motivated to do so because adding a cyclic comonomer to ethylene oxide significantly improves the antistatic performance of the polymer, as evidenced by Yu (col. 4 lines 16-26).

Response to Arguments

Applicant's arguments filed July 1, 2008 have been fully considered but they are not persuasive, because:

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A) Applicant's argument that Braune et al. does not teach the claimed initiator combination is not persuasive. Braune et al. teaches using NEt_4 (page 65, 1st column, last 4 lines) which is a quaternary ammonium compound and Al(L)Cl_2 (page 65, 1st column, last 4 lines) where L is mbmp which is 2,2'-methylenebis(6-tert-butyl-4-methylphenol) (page 64, 2nd column last paragraph). This falls within the claimed mononuclear organylaluminum compound having the formula $\text{R}_3\text{-Al}$ since one of the R groups is an arylalkyl and the other two R groups are halogen.

B) Applicant's argument that Braune et al. does not teach the process provides higher molecular weight and shorter reaction time is not persuasive since these limitations are not claimed. Further, Braune et al. teaches the polymerization occurred with pronounced speed and control at room temperature (page 65, 2nd column 1st full paragraph).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Megan McCulley whose telephone number is (571)270-3292. The examiner can normally be reached on Monday - Friday 7:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571) 272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo, Ph.D./
Supervisory Patent Examiner, Art Unit 1796

/M. M./
Examiner, Art Unit 1796